

IN THE CLAIMS

Please delete claim 17 without prejudice to the future prosecution of subject matter contained therein. Please enter the following amendments by deleting the bracketed material and adding that which is underlined:

Claim 1. (Twice amended) An isolated, enriched or purified nucleic acid

(a) encoding a MDK1 polypeptide comprising the amino acid sequence set forth in SEQ ID NO: 2; or

(b) that [hybridizes under stringent conditions] is complementary to the nucleic acid of (a).

Claim 2. (Twice amended) A nucleic acid probe for the detection of MDK1 sequences, comprising:

(a) a [nucleotide] nucleic acid molecule comprising at least 50 contiguous nucleotides of [encoding a MDK1 polypeptide comprising the amino acid] the sequence set forth in SEQ ID NO: [2]1; or

(b) [a nucleotide] that [hybridizes under stringent conditions] is complementary to the [nucleotide] nucleic acid molecule of (a) [in a sample].

Claim 3. (Twice amended) A recombinant nucleic acid, comprising:

(a) a nucleic acid sequence that, when transcribed, produces a transcript encoding a MDK1 polypeptide comprising the amino acid sequence set forth in SEQ ID NO: 2; or

(b) that [hybridizes under stringent conditions] is complementary to the nucleic acid of (a); and

a vector or a promoter effective to initiate transcription in a host cell.

Sub  
G4  
F7  
at

Claim 22. (Three times amended) An isolated, enriched, or purified nucleic acid

(a) [comprising a nucleic acid sequence of claim 1] encoding [the] a MDK1 polypeptide comprising the transmembrane domain as set forth [as shown] by amino acids [555] 539 to 579 of [Figure 1] SEQ ID NO: 2; or

(b) that is complete complement to the nucleic acid of (a).

Claim 22  
Scope -  
Written  
Description

Claim 24. (Three times amended) An isolated, enriched, or purified nucleic acid

(a) [comprising a nucleic acid sequence of claim 1] encoding [the] a MDK1 polypeptide comprising the intracellular domain as set forth [as shown] by amino acids 580 to 998 of [Figure 1] SEQ ID NO: 2; or

(b) that is complete complement to the nucleic acid of (a).

Sub  
G5  
F8

Claim 25. (Three times amended) An isolated, enriched, or purified nucleic acid

(a) [comprising a nucleic acid sequence of claim 1] encoding two or more MDK1 [of the] domains selected from the group consisting of [the MDK1 polypeptide extracellular domain as shown by] amino acids 18 to 538 of [Figure 1] SEQ ID NO: 2, [the MDK1 polypeptide transmembrane domain as shown by] amino acids 555 to 579 of [Figure 1] SEQ ID NO: 2, and [the MDK1 polypeptide intracellular domain as shown by] amino acids 580 to 998 of [Figure 1] SEQ ID NO: 2; or

(b) that is complete complement to the nucleic acid of (a).

Sub H2  
F9

Claim 26. (Twice amended) A host cell which is genetically engineered to express the nucleic acid of claim [17,] 19, 21, [22,] 24, or 25.

#### SUMMARY

Claims 1-4, 16-19, 21, 22, and 24-26 are pending in the instant application.

Applicants have cancelled claim 17 and have amended claims 1-4, 16, 18, 19, 21, 22 and 24-26 herein. The amended claims are fully supported by the specification as filed, and

do not introduce new matter or require a new search. The amendments merely clarify the claimed subject matter using preferred terminology.

Notwithstanding the foregoing, Applicants expressly reserve the right to pursue subject matter no longer claimed in the instant application in this or other appropriate patent applications. Applicants respectfully request reconsideration of the claimed invention in view of the foregoing amendments and the following remarks.

*Non-Related Remarks*

Objections to the Specification

The Examiner has objected to the Brief Description of the Drawings and the Drawings, because figures 1-3 allegedly contain sequences that are not identified by unique sequence identification numbers. Applicants have amended the specification herein to insert sequence identifiers into the description of the drawings where necessary.

The Examiner has also objected to page 94 as allegedly reciting probes referring to specific nucleotides of MDK1 and MDK1.T1, but without sequence identification numbers. In response, Applicants have amended the specification to provide the requested identifiers.

The Examiner has also asserted that the submitted SEQ ID NOs 3, 5, 11, and 12 do not match the sequence information in the figures. Applicants have amended the specification to provide explicit sequence identification numbers within the Brief Description of the Drawings.

35 U.S.C. § 112, First Paragraph

The Examiner has rejected claims 1-14, 16-17, 21, 22, and 24-26 under 35 U.S.C. § 112, first paragraph, for allegedly not enabling the ordinarily skilled artisan to make and use the invention as claimed. Applicants respectfully traverse this rejection.

The standard for determining enablement is whether the specification as filed provides sufficient information as to permit one skilled in the art to make and use the

claimed invention. *United States v. Telectronics, Inc.*, 8 USPQ2d 1217, 1223 (Fed. Cir. 1988). The test of enablement is not whether experimentation is necessary, but rather whether any experimentation that is necessary is undue. *Id.* A considerable amount of experimentation is permitted, provided that it is merely routine, or provided that the specification provides a reasonable amount of guidance with respect to the direction in which the experimentation should proceed. *In re Wands*, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988).

The Examiner states that the claims are drawn to a nucleic acid that hybridizes under stringent conditions to a nucleic acid encoding MKD1 having the amino acid sequence set forth in SEQ ID NO: 2, and that "stringent conditions" are not defined by the claim. In an effort to advance prosecution, Applicants have amended the claims, deleting the phrase "that hybridizes under stringent conditions." The claims now refer to nucleic acids that are complementary to a nucleic acid encoding MKD1. The term "complementary" is understood by ordinarily skilled artisan to refer to two nucleic strands in which a guanine on one strand is paired to a complementary cytosine on the other strand, and an adenine on one strand is paired to a complementary thymine (or uracil in RNA) on the other strand.

The Examiner also contends that the specification does not teach how to use such nucleic acids, which encompass "a variety of species including full length cDNAs, genes and protein coding regions." Paper No. 28, page 4. The skilled artisan, however, will recognize that any such nucleic acid will be useful, for example as nucleic acid probes for the detection of MDK1, as described in the specification beginning on page 33.

Applicants believe that the foregoing claim amendments render the rejection moot, and respectfully request that it be withdrawn.

35 U.S.C. § 112, Second Paragraph

The Examiner has rejected claims 1-14, 16-17, 21, 22, and 24-26 under 35 U.S.C. § 112, second paragraph, for allegedly being indefinite with regard to the phrase "that hybridize under stringent conditions." As discussed above, the claims, as amended, now

refer to nucleic acids that are complementary to a nucleic acid encoding MKD1. Applicants believe that the foregoing claim amendments render the rejection moot, and respectfully request that it be withdrawn.

The Examiner has also rejected claims 1-14, 16-17, 21, 22 and 24-26 as allegedly being indefinite for the phrase "a nucleotide encoding MDK1," and for citing sequences in figure 1 without citing SEQ ID numbers. Applicants believe that the foregoing claim amendments, which replace "nucleotide" with the term "nucleic acid molecule," and provide appropriate SEQ ID numbers, render these rejections moot, and respectfully request that they be withdrawn.

*Art-Related Remarks*

35 U.S.C. § 102

The Examiner has rejected claims 1-4 under 35 U.S.C. § 102(b) as being allegedly anticipated by Boyd *et al.*, WO 93/00425. Specifically, the Examiner contends that the Boyd *et al.* reference discloses a nucleic acid having numerous stretches of identical consecutive residues that would be expected to hybridize under stringent conditions to SEQ ID NO: 1, which encodes SEQ ID NO: 2. Applicants believe that the foregoing claim amendments, which delete the phrase "that hybridizes under stringent conditions," render this rejection moot, and respectfully request that it be withdrawn.

The Examiner has also rejected claims 16 and 18 as being allegedly anticipated by Boyd *et al.*, contending that the Boyd *et al.* reference discloses a nucleic acid sequence of both SEQ ID NO: 1 and SEQ ID NO: 3 ranging from 2 to 17 consecutive nucleotides. Applicants respectfully submit that the term "a nucleic acid sequence" in claims 16 and 18 is intended to refer to the specific sequences in the various sequence identifiers; the article "a" was used due to a lack of antecedent basis for the sequence identifiers in the claims from which claims 16 and 18 depend. In an effort to advance prosecution, the claims now refer to "the" sequences of the various sequence identifiers. Applicants believe that the foregoing claim amendments render this rejection moot, and respectfully request that it be withdrawn.